



Which population level environmental factors are associated with asthma, rhinoconjunctivitis and eczema? Review of the ecological analyses of ISAAC Phase One

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Abstract:

The International Study of Asthma and Allergies in Childhood (ISAAC) Phase One showed large worldwide variations in the prevalence of symptoms of asthma, rhinoconjunctivitis and eczema, up to 10 to 20 fold between countries. Ecological analyses were undertaken with ISAAC Phase One data to explore factors that may have contributed to these variations, and are summarised and reviewed here. In ISAAC Phase One the prevalence of symptoms in the past 12 months of asthma, rhinoconjunctivitis and eczema were estimated from studies in 463,801 children aged 13 - 14 years in 155 centres in 56 countries, and in 257,800 children aged 6-7 years in 91 centres in 38 countries. Ecological analyses were undertaken between symptom prevalence and the following: Gross National Product per capita (GNP), food intake, immunisation rates, tuberculosis notifications, climatic factors, tobacco consumption, pollen, antibiotic sales, paracetamol sales, and outdoor air pollution. Symptom prevalence of all three conditions was positively associated with GNP, trans fatty acids, paracetamol, and women smoking, and inversely associated with food of plant origin, pollen, immunisations, tuberculosis notifications, air pollution, and men smoking. The magnitude of these associations was small, but consistent in direction between conditions. There were mixed associations of climate and antibiotic sales with symptom prevalence. The potential causality of these associations warrant further investigation. Factors which prevent the development of these conditions, or where there is an absence of a positive correlation at a population level may be as important from the policy viewpoint as a focus on the positive risk factors. Interventions based on small associations may have the potential for a large public health benefit.

Source: <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2831000>

Resource Description

Exposure :

weather or climate related pathway by which climate change affects health

Air Pollution, Meteorological Factors

Air Pollution: Allergens, Interaction with Temperature, Particulate Matter

Geographic Feature:

resource focuses on specific type of geography

Climate Change and Human Health Literature Portal

None or Unspecified

Geographic Location:

resource focuses on specific location

Global or Unspecified

Health Impact:

specification of health effect or disease related to climate change exposure

Dermatological Effect, Respiratory Effect

Respiratory Effect: Asthma, Upper Respiratory Allergy

Population of Concern: A focus of content

Population of Concern:

populations at particular risk or vulnerability to climate change impacts

Children

Resource Type:

format or standard characteristic of resource

Review

Timescale:

time period studied

Time Scale Unspecified